CLAIMS:

1. An assistant light source comprising:

an elongated light stick having a reflecting prism face with a plurality of prisms and having light emitting face opposed to said reflecting prism face, wherein an incident light is transmitted inside thereof, the transmitted light is reflected on said reflecting prism face, and the reflected light is emitted from said light emitting face; and

light generating means arranged on both sides of said light stick for generating the light for emitting to said light stick;

wherein said plurality of prisms has a sectional shape in consideration of path in direct light from said light generating means and path in light reflected on said light emitting face.

2. An assistant light source according to claim 1, wherein said sectional shape is substantially triangle shape having one tip angle and two tilt angles, wherein tip angle is constant in each prism, and wherein tilt angles are different from each other in each prism.

3. An assistant light source according to claim 1 or 2, wherein prism in the center of said light stick has substantially isosceles triangle shape.

4. An assistant light source according to any one of claims 1 to 3, wherein said tip angle (T°) is calculated by formula (1) as follows;

$$T=180-2\times(45-1/2\times\tan^{-1}(3W/L)) \qquad \text{formula (1)}$$

where L represents the length of said light stick, and W represents the width of said light stick.

5. An assistant light source according to any one of claims 1 to 4, wherein a smaller tilt angle (a(X) °) is calculated by formula (2) as follows;

$$a(X)=45-1/2\times\tan^{-1}(W/2X) \qquad \text{formula (2)}$$

where W represents the width of said light stick and X represents a distance from an end of said light stick to a prism.

6. An assistant light source according to any one of claims 1 to 4, wherein a tilt angle (a(X)°) closer to an end of said light stick is calculated by formula (3) as follows;

$$a(X)=45-1/2\times\tan^{-1}(3W/2X) \quad \text{formula (3)}$$

where W represents the width of said light stick and X represents a distance from an end of said light stick to a prism.

7. An assistant light source according to claim 5 or 6, wherein a tilt angle (a(X) °) of prism closer to an end of said light stick is calculated by formula (2) and a tilt angle (a(X) °) of prism in the center of said light stick is calculated by formula (3).

8. An assistant light source according to claim 5 or 6, wherein a tilt angle (a(X) °) of prism susceptible to said direct light from said light generating means is calculated by formula (2) and a tilt angle (a(X) °) of prism susceptible to the light reflected on the light emitting face is calculated by formula (3).

9. An assistant light source according to any one of claims 5 to 8, wherein a tilt angle (a(X) °) of prism in area of X<2mm is constant.

10. An assistant light source according to any one of claims 1 to 9, wherein the depth (D μm) of the plurality of prisms is calculated by formula (4) to formula (6) as follows;

(N=1 to 17)

$$D(N)=24.3 \quad \text{formula (4)}$$

(N=18 to 28)

$$D(N)=1.5\times N-1.2 \quad \text{formula (5)}$$

(N=29 to 85) (center of light stick)

$$D(N)=0.6\times N+24 \quad \text{formula (6)}$$

where N represents the number of prisms from an end of said light stick.

11. An assistant light source according to any one of claims 1 to 10, wherein a reflective metal film is formed on said reflecting prism face.

12. An assistant light source according to any one of claims 1 to 11, wherein said

light stick has an adjustment area Y in which prisms using the tilt angle calculated by formula (2) and prisms using the tilt angle calculated by formula (3) are formed alternately as light of a surface light source.

13. A front-light comprising an assistant light source according to any one of claim 1 to claim 12; and a light guide plate for emitting light emitted from said assistant light source as light of a surface light source.

14. A liquid crystal display device comprising: a liquid crystal cell having a reflecting member; and the front-light according to claim 13 for supplying light to said liquid crystal cell.